Wachendorff Panel PC Series 1

PPC002-xxxxxxxxxxxxxxxxx2P

Installation instructions

Version 1.3

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1. Foreword

Thank you for choosing a Wachendorff product. We trust that the product will provide you with many years of valuable service. To ensure that the product has a longlife expectancy, please check and compare all connections of the device with the installation instructions before switching on the device.

2. Guarantee conditions

Defective devices are either repaired or replaced.
However, this does not apply to the following points:

1. The warranty is void if the appliance is older than 3 years from the date of purchase.
2. Damage caused by force majeure, accident, negligence, improper installation or misuse.
3. The product was put into operation or repaired by unauthorised personnel.
4. By removing or damaging labelling.

3. Warning

Ensure that all local and national electrical standards are complied with when installing the appliance.

4. Safety instructions

Power supply: Use an output power that complies with SELV (Safety Extra-Low Voltage) requirements. The device can only be operated with direct current, voltage range: 12 to 36 VDC, compatible with most controller DC systems. If both connections are to be used in parallel for the power supply, the power supply must come from the same voltage source.

Fuse/switch on: Secure your system/machine properly. If the display does not switch on within 5 seconds of switching on, switch it off. Check that the wiring is correct and try switching the device on again.

Overvoltage: DC voltage sources should ensure adequate isolation from the main power supply and similar hazards.

EMERGENCY STOP: A hard-wired EMERGENCY STOP should be installed in every system to fulfil the ICS safety recommendations.

Supply voltage conditions: Do not switch on the device under inductive load or use the same supply voltage as the controller. Note: The 24 VDC output of some controllers does not supply enough current to operate the monitor.

Wiring: a. The length of the power cables should be minimised (max: 500m shielded, 300m unshielded).
c. If the wiring could be exposed to a lightning strike or overvoltage, suitable surge arresters must be used.
d. Keep AC, high-energy and fast-switching DC power cables separate from signal cables.
e. Add a resistor and a capacitor in the parallel circuit between the unearthed DC power supply and the housing earth. This provides a path for static and high frequency power dissipation. Typical values are 1M Ohm and 4,700pF.

You should be aware that the devices could fail due to an internal fault and thus reach an unsafe state.
In addition, electrical faults in the user interface can lead to an unintentional start of the connected devices. This can lead to property damage and/or injury to the operator.
If you use programmable controls that require an operator, be aware of the safety risks and take appropriate precautions.

5. Commissioning

This document describes the commissioning and installation of the Wachendorff Panel PC PPC002-xxxxxxxxxxxxxxx2P. Detailed descriptions of the specifications and applications can be found in the data sheet.

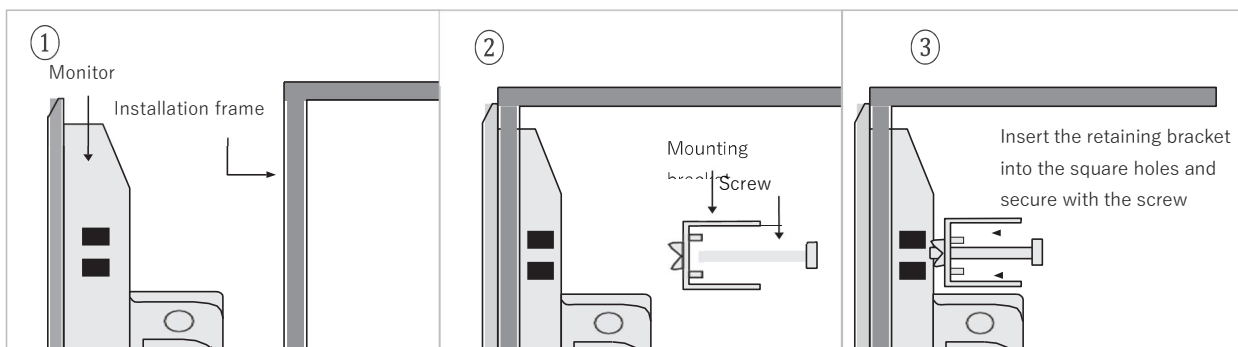|	
Electronic Surroundings	The PPC002-xxxxxxxxxxxxxxxx2P has been tested and fulfils the European CE requirements. This means that the electronics in the device are protected against external electrical influences. In special cases, however, there is no complete protection. Correct installation of the cables and proper earthing will ensure that the device functions perfectly.
Environment	• Ensure that the device has been installed correctly and that the device specifications have been adhered to. Avoid installing the devices in locations where mechanical vibrations or shocks are present. • Do not work with the appliance in places where there is a risk of explosion, e.g. due to flammable gases, vapours or dust. • Do not install the appliance in places where corrosive gases such as SO2 exist. • The device is designed for vertical installation on a flat surface. • Do not expose the appliance to direct sunlight or other sources of heat. • Relative humidity: 10 % to 90 % (non-condensing)
IP protection class	IP65 / front
Cleaning instructions	Disconnect the appliance from the power supply before cleaning it. Clean the appliance with cloths moistened with clean water. Do not use liquid or spray cleaning agents for cleaning.

6. Unpacking the appliance

Unpack the delivery and check that it is complete. If any damage is found, inform the supplier.

Contents
(1) Installation instructions
(2) PPC002-xxxxxxxxxxxxxxxxx2P
(3) Fastening material

7. Assembly instructions

Use a mounting frame that provides sufficient rigidity. Refer to the data sheet for the cut-out dimensions. Fasten the monitor with all mounting holes and the brackets and screws supplied. Screw torque: 0.294 to 0.441 Nm. (To achieve a watertight effect and to prevent deformation of the panel). Plan sufficient space around the appliance and inside the installation location for ventilation and cables. Take into account the heat from other devices inside the installation location. The ambient temperature around the appliance must be between -10 and 60°C.
It is recommended to allow a distance of 3 cm between the back of the appliance and other appliances.

8. Voltage connection

The Panel PC has 2 connections for the power supply:

- 2-, 6- or 12-pin terminal strip for 12 to 36 VDC (depending on processor type and display size)
- Socket for 12 to 36 VDC via external power supply unit (accessory)

Connect:
- 2-, 6- or 12-pole terminal strip for 12 to 36 VDC:
  1. connect the "+" line of your DC voltage source to the "+" input of the 2-pole terminal strip and the "-" line to the "-" input.
  2 To avoid potential differences and damage to the USB ports, NEVER connect the Panel PC to several devices with different ground potentials.
- Socket for 12 to 36 VDC via external power supply unit: An external power supply unit is available as an accessory for connection to the mains voltage of 230 VAC.
  This is not included in the scope of delivery.
Only use one connection at a time, otherwise damage may occur.

8.1. 2-pole terminal:

Processors: J4125; i3/i5/i7 up to 10th gen. Intel® Core™ (display size 10.1" to 13.3")

8.2. 6-pole terminal:

Processor: i3/i5/i7 up to 10th gen. Intel® Core™ (display size 15" to 23.8")

8.3. 12-pin terminal (supplied with plug):

Processor: J6412; i3/i5/i7 from 12th gen. Intel® Core™ (display size 10.1" to 23.8")

9. Interface arrangement

9.1 Processor Intel® Celeron® J4125:

Top view up to and including 12.1":

Bottom view including 12.1":

Top view 13.3" to 23.8":

Bottom view 13.3" to 23.8":

9.2 Intel® Celeron®   J6412:

Top view up to and including 12.1":

Bottom view up to and including 12.1":

Top view 13.3" to 23.8":

Bottom view 13.3" to 23.8":

9.3 Intel® Core™ i3/i5/i7 up to 10th gen:

Top view up to and including 13.3":

Bottom view up to and including 13.3":

Top view 15" to 23.8":

Bottom view 15" to 23.8":

9.4 Intel® Core™ i3/i5/i7 from 12th gen:

Top view 10.1" to 23.8":
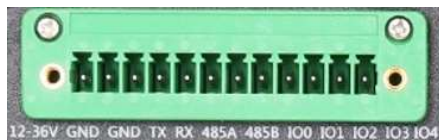

Bottom view 10.1" to 23.8":

10. Interfaces

10.1: Processor Intel® Celeron J4125®

Interface	Quantity and description
USB	2 x USB 2.0 type A, 2 x USB 3.0 type A
Serial	2x RS-232 DB-9
Ethernet	2x RJ-45 Gigabit Ethernet
WLAN	802.11abgn/ac/d/e/i/h/w
Bluetooth:	Bluetooth 4.0
Display	1x HDMI, 1x VGA
Audio	1x audio out, 3.5 mm jack
SIM card	Without function (optional equipment)

10.2: Processor Intel® Celeron®   J6412

Interface	Quantity and description
USB	2 x USB 2.0 type A, 2 x USB 3.0 type A
Serial	1x RS-232 DB-9; 1x RS-232 terminal strip; 1x RS484 terminal strip
Ethernet	2x RJ-45 Gigabit Ethernet
WLAN	802.11abgn/ac/d/e/i/h/w
Bluetooth:	Bluetooth 4.0
Display	1x HDMI, 1x VGA
Audio	1x audio out, 3.5 mm jack
GPIO	5x GPIO terminal strip
SIM card	Without function (optional equipment)

12-pin screw terminal (supplied with plug):

PIN	Description of the
1	12-36 VDC (supply)
2	GND (supply)
3	GND
4	RS232 TX
5	RS232 RX
6	RS485A
7	RS485B
8	IO0 (TTL)
9	IO1 (TTL)
10	IO2 (TTL)
11	IO3 (TTL)
12	IO4 (TTL)

10.3: Intel® Core™ i3/i5/i7 up to 10th gen:

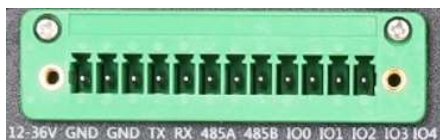| Interface	Quantity and description
USB	2 x USB 2.0 type A, 2 x USB 3.0 type A
Serial	1x RS-232 DB-9; 1x RS-232 terminal strip
Ethernet	2x RJ-45 Gigabit Ethernet
WLAN	802.11abgn/ac/d/e/i/h/w
Bluetooth:	Bluetooth 4.0
Display	1x HDMI, 1x VGA
Audio	1x audio out, 3.5 mm jack
GPIO	1x GPIO terminal strip
SIM card	Without function (optional equipment)

6-pin screw terminal (only 15" to 23.8"):

PIN	Description of the
1	DC+: 12-36 VDC (supply)
2	DC-: GND (supply)
3	GND
4	RS232 RX
5	RS232 TX
6	5 VDC

10.4: Intel® Core™ i3/i5/i7 from 12th gen:

Interface	Quantity and description
USB	2 x USB 2.0 type A, 2 x USB 3.0 type A
Serial	1x RS-232 DB-9; 1x RS-232 terminal strip; 1x RS484 terminal strip
Ethernet	2x RJ-45 Gigabit Ethernet
WLAN	802.11abgn/ac/d/e/i/h/w
Bluetooth:	Bluetooth 4.0
Display	1x HDMI, 1x VGA
Audio	1x audio out, 3.5 mm jack
GPIO	5x GPIO terminal strip
SIM card	Without function (optional equipment)

12-pin screw terminal (supplied with plug):

PIN	Description of the
1	12-36 VDC (supply)
2	GND (supply)
3	GND
4	RS232 TX
5	RS232 RX
6	RS485A
7	RS485B
8	IO0 (TTL)
9	IO1 (TTL)
10	IO2 (TTL)
11	IO3 (TTL)
12	IO4 (TTL)

11. Ordering information

Article description	Order no.
Panel PC, xx" TFT, with or without touch	PPC002-xxxxxxxxxxxxxxxxx2P
External power supply unit, 230 VAC to 24 VDC, 2.5 A with hollow plug (without 230 VAC connection cable), CPU: J14125 / J6412 / Intel® Core™ 6th/7th Gen	PPC-PWRADAP_01_24VDC2.5A
External power supply unit, 230 VAC to 24 VDC, 4 A with hollow plug (without 230 VAC connection cable), CPU: Intel® Core™ 8th/10th Gen.	PPC-PWRADAP_01_24VDC4A
External power supply unit, 230 VAC to 24 VDC, 5 A with hollow plug (without 230 VAC connection cable), CPU: Intel® Core™ 12th Gen.	PPC-PWRADAP_01_24VDC5A
230 VAC connection cable Power supply unit Panel PC	PPC-PWRCRD_01

12. Copyright

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13. Disclaimer

All technical content within this document may be modified without prior notice. The content of this document is subject to periodic revision.
Repairs will be charged to the user in the event of loss due to fire, earthquake, third party interference or other accidents, or in the event of intentional or accidental misuse or abuse, or use under abnormal conditions. Wachendorff Prozesstechnik is not liable for accidental loss due to use or non-use of this product, such as loss of business revenue.
Wachendorff Prozesstechnik is not liable for the consequences of improper use.

14. Radio frequencies and maximum transmission power

MODE	Frequency band	Transmission power
IEEE802.11 b/g/n	2400 - 2483.5 MHz	20dBm EIRP max (100mW)
IEEE802.11 a/n/ac	5150 - 5725 MHz	23dBm EIRP max (200mW)
Bluetooth/BLE	2400 - 2483.5 MHz	10dBm EIRP max (10mW)

15. Other provisions and standards

WEEE information

Disposal of old electrical and electronic equipment (valid in the European Union and other European countries with a separate collection system)
This symbol on the product or on the packaging means that this product must not be treated as household waste. Instead, this product should be taken to the appropriate disposal point for the recycling of electrical and electronic equipment. If the product is disposed of correctly, you will help to prevent negative environmental impacts and damage to health that could be caused by improper disposal. Recycling material will preserve our natural resources. For more information on how to recycle this product, please contact your local city office, your household waste collection service or the retailer where you purchased this product.

RoHS Directive

The device complies with the latest version of the 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (commonly referred to as the Restriction of Hazardous Substances Directive or RoHS).

RED Directive

The device complies with the latest version of the 2014/30/EU (electromagnetic compatibility directive) and 2014/53/EU (Radio Equipment Directive, RED) directives.

A complete version of the EU Declaration of Conformity is available on request.

16. Technical consulting & s ervice

If you have any questions about the product, you can find technical support on our homepage: https://www.wachendorff-prozesstechnik.de/tbs/

- For technical support after a purchase (commissioning, project planning, parameterisation, configuration, programming, etc.), please dial: **+49 6722 9965-966** or send an e-mail to: support@wachendorff.de
- For application advice before a possible purchase (product selection, suitability, recommendation), please call: **+49 6722 9965-544** or send an e-mail to: beratung@wachendorff.de

In the event of a repair or device failure, please contact our technical advice & service team first. More than 75% of all cases are resolved over the phone, saving you any costs or the dispatch of your product. You will also receive information on the return procedure.

For the return process, please go to our homepage at https://www.wachendorff-prozesstechnik.de/garantie-und-reparatur, open the "Request return number" form and follow the instructions. After we have checked your form, we will send you a document with a return authorisation number (RSN) by e-mail. Please enclose this document with your return.

Note:
The return authorisation number (RSN) is generated specifically for your return. It regulates the conditions and ensures direct allocation and faster processing of your return. It is therefore extremely important that the RSN is enclosed with your return.

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